



AIR EXCHANGE EQUIPMENT INSTALLATION AND USER MANUAL



TALTERI

DIVK-C 91 CD



**THE QUALITY GOALS OF AIR CONDITIONING COME TRUE
WITH THE RECOVERY SYSTEM**

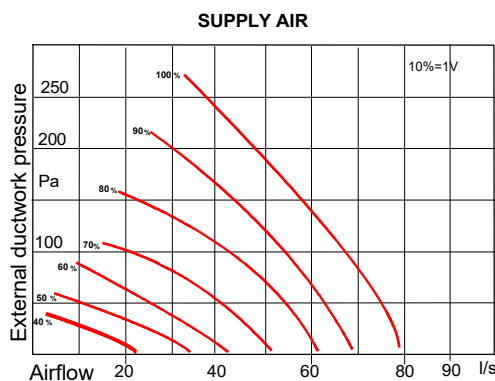
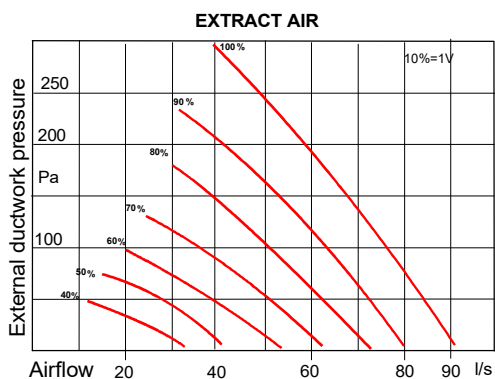
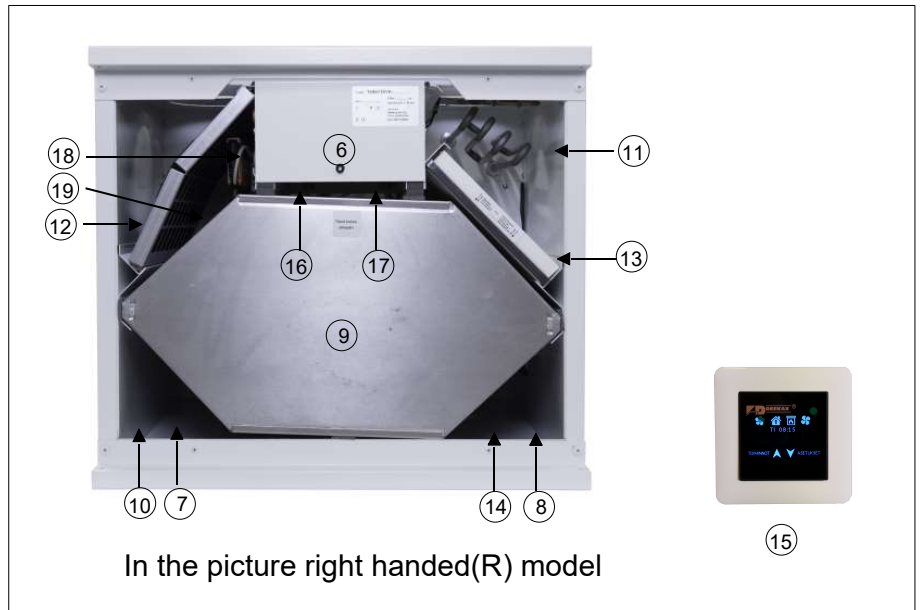
TALTERI removes used air from interior and brings in fresh air. Humidity and impurities are exhausted through thermal recovery unit that heats the filtered ambient air cost-effectively. The fresh warm air is channelled draught-free and noise-free into the premises in necessary quantities.

ENSURE THE QUALITY OF AIR EXCHANGE!

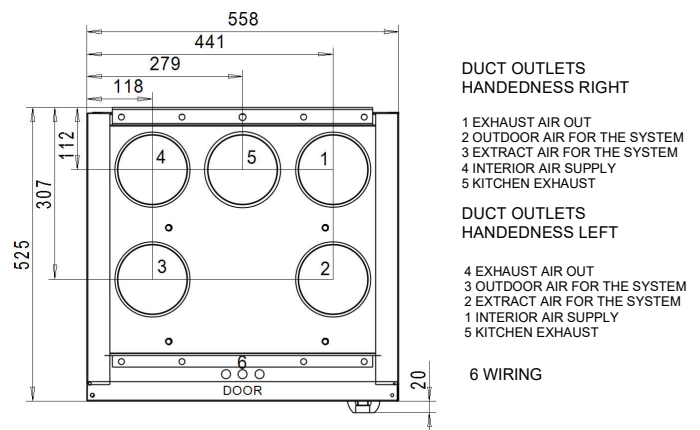
MACHINE PARTS AND TECHNICAL INFORMATION

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- 1 Exhaust air 125 mm
- 2 Outdoor air 125 mm
- 3 Extract air 125 mm
- 4 Supply air 125 mm
- 5 Kitchen exhaust.... 125 mm
- 6 Door switch
- 7 Supply fan, adjustable 118W
- 8 Extract fan, adjustable 118W
- 9 Heat exchanger
- 10 Postheater 500W
- 11 Preheater 1000W
- 12 Extract air filter (G4) ISO Coarse>75%
- 13 Supply air filter (F7) ISO ePM1
- 14 Exhaust of condensing water
- 15 Touchscreen control panel for setting up and controlling the HRV unit (optional)
- 16 Preheat manual overheat protection
- 17 Postheat manual overheat protection
- 18 Summer bypass control, motorized
- 19 Humidity transmitter (optional)



Dimensions: Height 495 mm, width 558 mm, depth 525 mm, weight 51 kg



Kitchen exhaust air volumes				
Adjusting voltage	%	70	80	90 100
Kitchen exhaust air volumes	l/s	43	49	55 60

Fan speed %		40	50	60	70	80	90	100
Fan input power W		22	32	46	66	95	138	198
Sound pressure level L_{pA} of the installation space dB(A)		20	22	27	31	35	37	40
Exhaust air(E) and Supply air(S) sound power level in air duct by octave band lw	Hz	E S	E S	E S	E S	E S	E S	E S
	63	38 49	43 55	48 60	52 63	56 67	59 72	60 74
	125	39 43	43 49	48 53	52 56	56 60	58 65	61 68
	250	37 41	42 46	47 51	52 55	55 59	58 63	61 66
	500	31 44	36 52	41 54	46 58	49 62	52 66	55 69
	1000	34 46	39 52	43 57	47 60	50 63	53 67	55 69
	2000	19 34	26 43	32 50	37 55	41 59	43 63	46 66
	4000	* 23	11 33	17 39	23 44	28 49	31 54	34 58
	8000	* *	* 23	* 33	11 39	17 45	20 50	23 54
Total power level L_{wa}		35 46	40 53	44 58	48 62	52 65	54 68	56 72

TALTERI DIVK-C91 INSTALLATION

The air exchange unit is meant for warm inner facilities. Suitable installation spots are, among others, office, dressing or household facilities and technical or warm storages. In case the temperature of the installation location is lower than room temperature, the factory settings of the appliance must be changed to obtain faultless functioning. The unit can not be installed into cold outer premises or garages.

UPPER BASE DUCT

The channelling is usually mounted to the upper base thermal insulation. The steam barrier puncture must be carefully sealed. While installing the unit to channels, steel steam barrier plate, supplied as extra, will come handy. The steam barrier plate is attached securely between the roof trusses, 10mm smaller hole must be cut into the gasket mat and channels are installed through the plate. The steam barrier must be hermetically taped. The unit can be attached right to the steam barrier plate with four M8 thread bars at desired height. Note the measurements of the steam barrier plate during the installation process. The bolts and thread bars are purchased separately.

WALL ATTACHMENT

The wall mounting kit includes a ceiling mounting plate, a wall-mounting plate and 15 mm thick insulation pieces. The wall-mounting plate is installed about 25 mm below the roof surface. The wall attachment plate will be fixed to the wall and then the unit lifted up to the attachment plate, checked into perfectly horizontal position and then drill holes for the metal screw through the mounting plate in to the bottom of the machine. Roof moldings can be put around the machine.

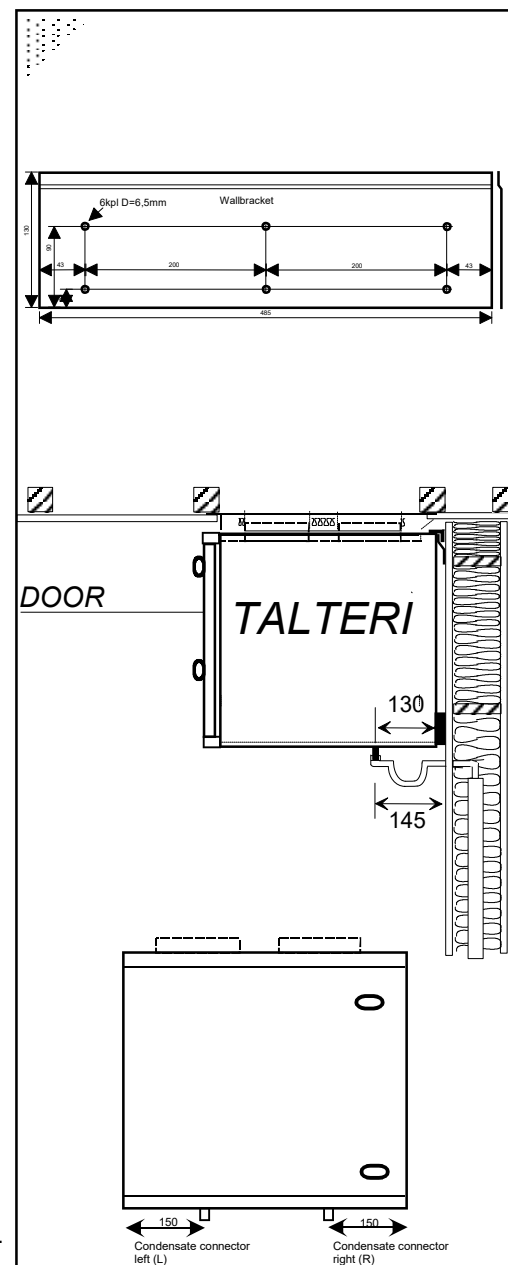
KITCHEN EXHAUST DUCT

The channel output (5) is intended for exhaust channel of the cooker hood. If the exhaust channel of the cooker hood is not in use, it must close.

If the cooker hood is connected to the kitchen extract duct (past heat recovery), all the basic ventilation holes of the cooker hood closing damper must be closed and in the kitchen is needed a separate extract valve which is connected to the extract air duct.

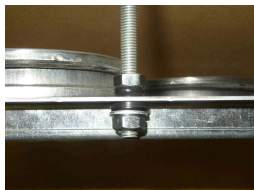
CONDENSATE WATER

Condensate drain is connected to the machine condensate connector (3/8 "external thread). Condensate can be made at a least 10 mm in the bore copper pipe or Relatively stiff hose. The water pipe Making about 10 cm in the water trap and the tube is connected to a floor drain. The water line shouldnt be connected directly to the sewer.



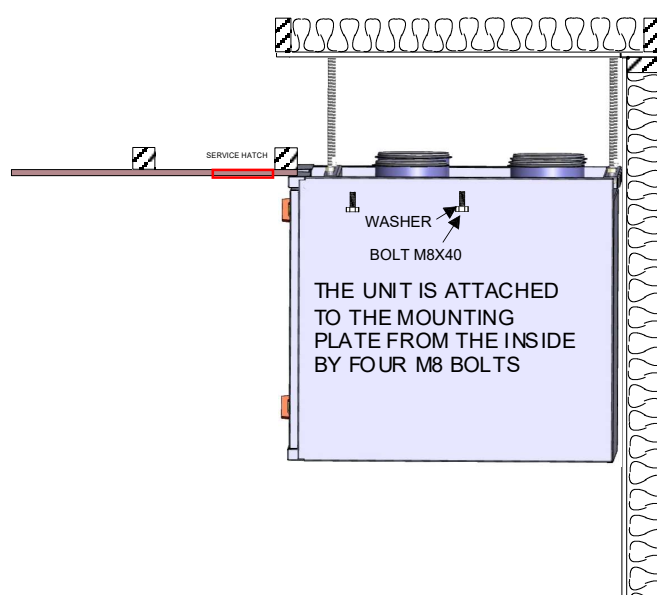
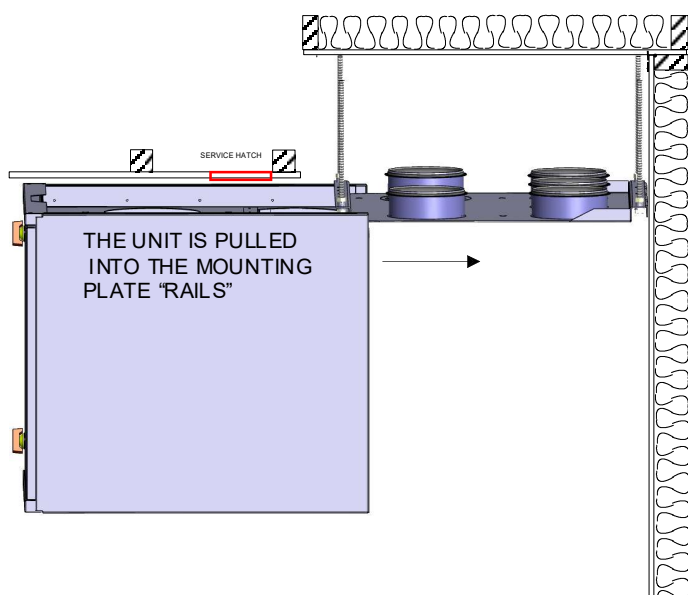
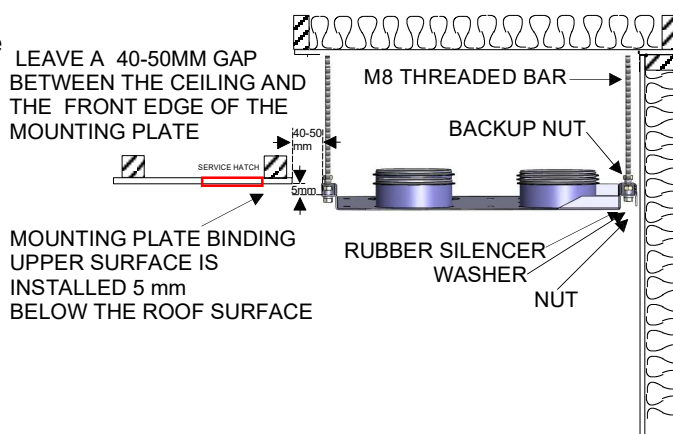
DIVK-C 91 INSTALLATION TO A SUSPENDED CEILING

The ceiling-mounting plate is attached to the roof with M8, thread bars (not included in the delivery).

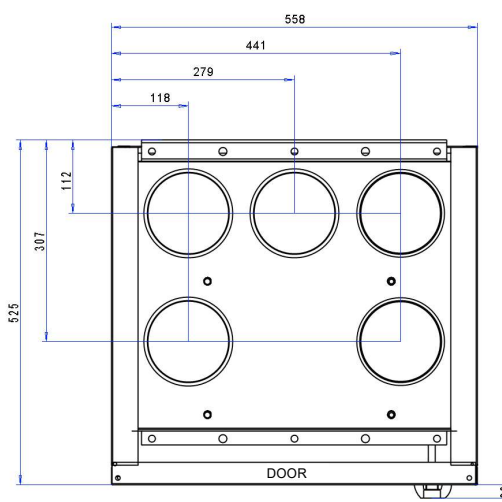
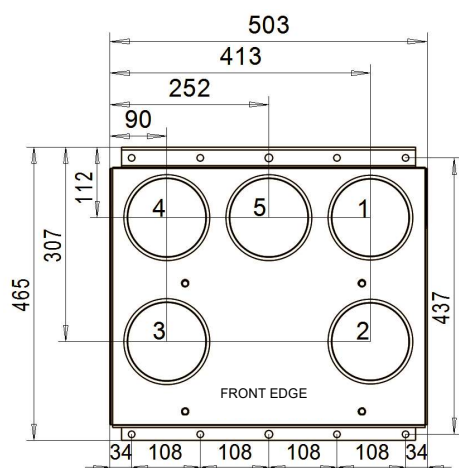


The head of the threaded bar can not reach below the bottom of the plate.

The unit will be pushed to the mounting plate and tightened with four M8 bolts against the mounting plate so that the cover seal of the unit is evenly sealed against the mounting plate, not tighter.



MEASURES OF THE MOUNTING PLATE



ELECTRICAL CONNECTIONS

Electrical connections must be done following the installation manual and wiring diagram.

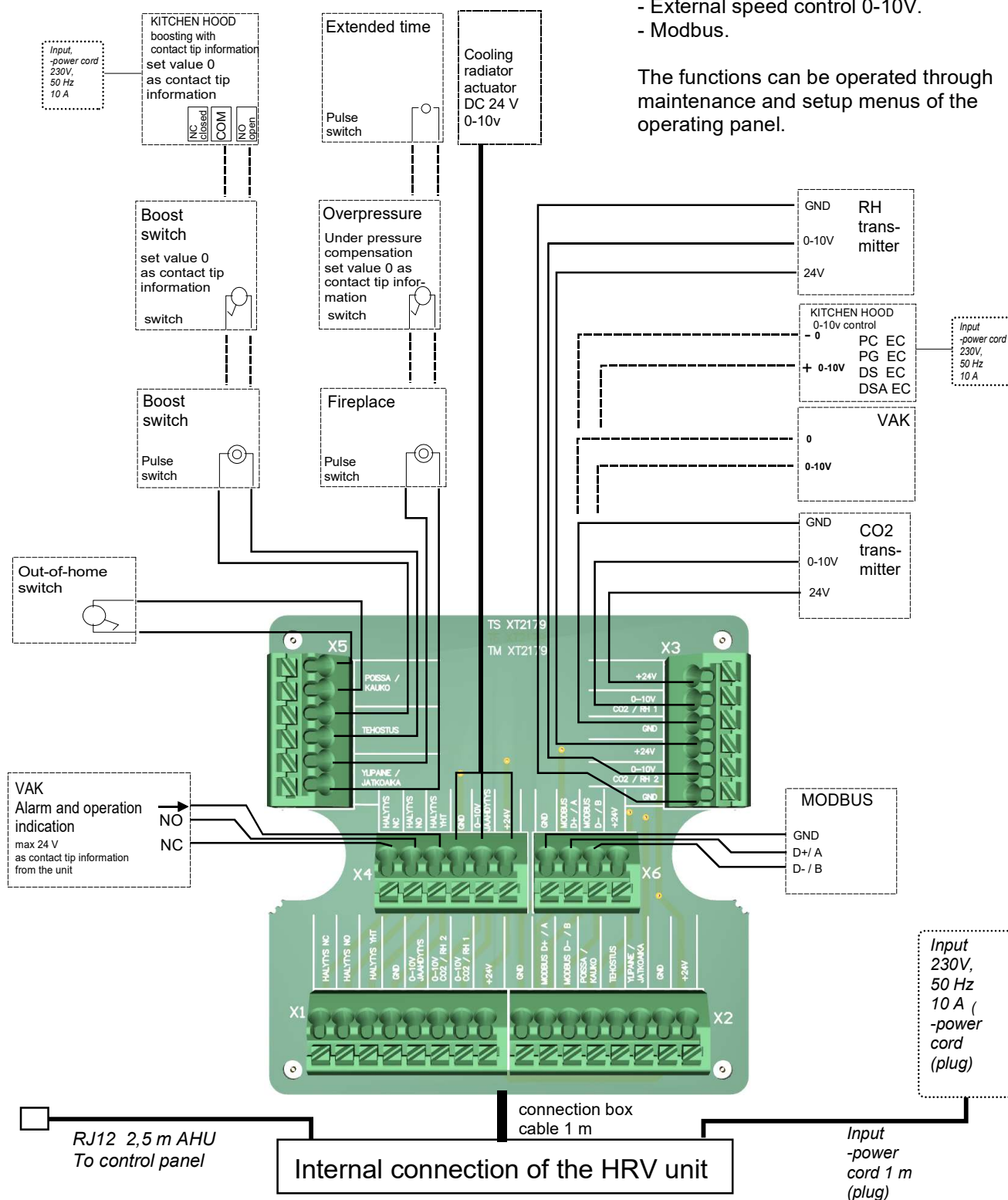
ELECTRICAL CONNECTIONS CAN BE DONE ONLY BY AN ENTREPRENEUR WITH RESPECTIVE INSTALLATION RIGHTS.

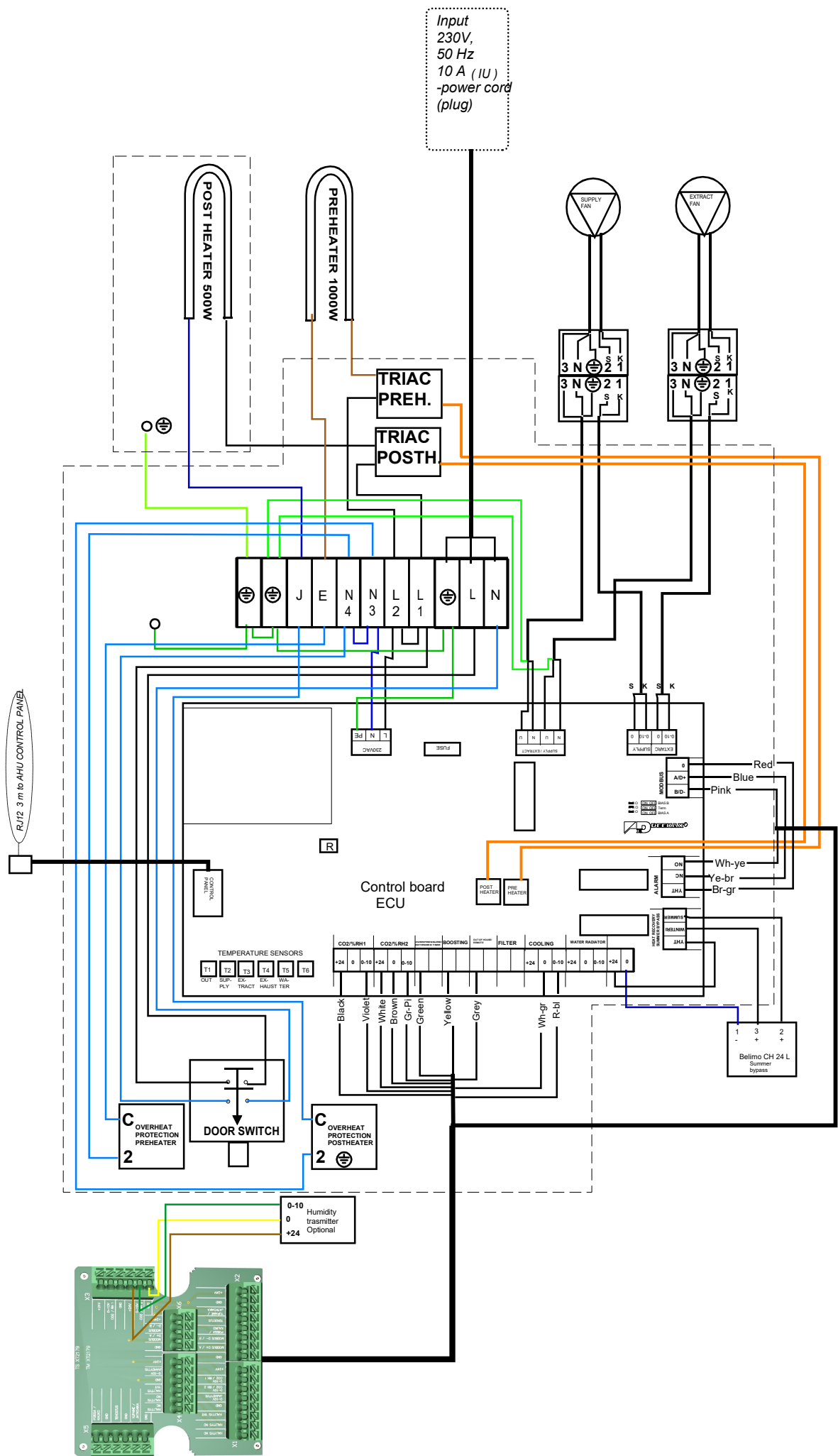
The external connections of the machine are connected to the connection box located on the top of the machine. The machine has a plug connector. The setup of the machine and changes of the parameters are made using a separate AHU control panel. The control panel is connected to the cable located on the top of the machine with the RJ12 connector.

The following can be connected as accessories:

- Carbon dioxide transmitter;
- Humidity transmitter;
- Separate Overpressure or Extended time switch (pulse switch);
- Separate Boost switch (pulse switch); or setting off as pre-data (for instance, sauna oven, stove hood);
- Remote control or out-of-home switches (pre-data);
- Differential pressure switches for filters;
- External speed control 0-10V.
- Modbus.

The functions can be operated through maintenance and setup menus of the operating panel.







INTRODUCTION OF THE AIR EXCHANGE SYSTEM

BEFORE OPERATING YOUR AIR EXCHANGE SYSTEM, MAKE SURE THAT:

- There are no loose objects within the unit or the air impeller;
- The coverings of construction-time are removed from the outlet- and exhaust air holes;
- All isolations and steam barriers are in order;
- The heat transfer and fans are in their places;
- The condensing water outlet is installed and the water is drained out;
- The air impellers and their adjusters are in working order;
- Afterheating is regulated and working.

USAGE DURING INSTALLING

The air exchange unit should be started as soon as installation permits.

Efficient air exchange promotes drying of the constructions and prevents damage.

In case channelling has not been completed, fans and adjustments are missing, filter paper must be used in place of fans to keep the channels clean and provide sufficient counterpressure for preventing overload. The unit must be used with full power and check the drainage of the condensing water.

The appliance, filters and heat exchangers must be cleaned and the system adjusted after the construction works are completed.

BASIC ADJUSTMENT OF AIRFLOW

The unit alone can not produce good interior air in case the channels and fans are installed carelessly and main adjustments are not made.

Regulate the inlet and outlet fans to the planned positions and start the unit

at design power speed. Measure the airflow in outside- and exhaust air channels.

The outlet must be 5-10% higher than inlet. Check the pressure level of the channels by checking from the fans and adjust it accordingly to obtain the pressure levels for vents; adjust and lock the pattern. Draw measuring- and adjustment records!

USAGE AND CORRECT LEVEL OF AIR EXCHANGE

The air exchange level is regulated by changing the working speed of the air impeller from the operating panel. Airflow of different adjustable positions can be seen from table 2.

Adjustable position 1 is for basic air exchange for an empty house.

Adjustable position 2 and 3 are normal working positions.

Adjustable position 4 and 5 are efficiency positions (i.e. for saunas).

The correct usage positions will be found by experience; observing the purity of the air or sultriness when coming in from outside, observing moisture on the windows or drying of the sauna.

AFTERHEATING AND SUMMER BYPASS OF INLET AIR

The unit is equipped with 500 W electrical battery operated by the means of triac-adjuster operated by the operating device for afterheating the heat recovered inlet air.

The temperature of inlet air is usually regulated to +17C.

The temperature may be adjusted to higher during winter so there would be no draught like feeling. In case of severe frost and efficiency mode the heating power might turn out insufficient – in such circumstances, the air exchange should be reduced.

The overheating protection launched during malfunctioning must be annulled manually.

During summertime, the bypass plate will be opened so the extract air will not warm up the inlet air.

CONDENSING WATER AND FREEZING PREVENTION

Exhaust air heat exchanger cools the moisture exchanger condenses into water, Which flows the condensation water in the pool and from there through a hose through a water trap open sewer.

In freezing temperatures the water to Prevent freezing of the exchanger with double-acting blocking That first frost the preheater is switched on and the temperature rises over the set value switched off.

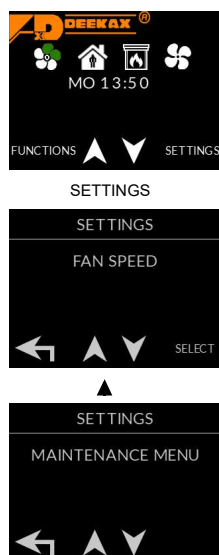
If the preheater resistor power It is not enough, and the exhaust air temperature drops less than a "waste of cold air" limit-value power supply fan stepwise dropped until the threshold is reached.

THE SUMMER BYPASS OF THE HEAT RECOVERY UNIT MUST BE IN THE WINTER POSITION WHEN THE AIRFLOWS ARE BEING ADJUSTED.

INTRODUCTION OF THE AHU CONTROL PANEL

Settings are applied via the service menu

SERVICE MENU



NOTE! SWIPE RIGHT AT THE TOP OF THE SCREEN

Touch screen buttons:



Fan speed adjustment 1....5



Out-of-house mode



Fireplace switch
(pressure compensation)



Boosting



The button can be used to browse the menu upwards and change settings.



The button can be used to browse the menu downwards and change setting value.



Return to the previous or main menu.

INTRODUCTION OF THE AHU CONTROL PANEL

SPEED CONTROL WITH A COOKER HOOD (0-10V)

0-10V external control (0-10V hood, remote monitoring) select the deployment
SENSOR 1 "EXT" or SENSOR 2 "EXT"

External control controls the basic speed, replaces the fan speed set in the menu.
Out-of-home, overpressure and boost are in use normally.

The main screen shows the fan speed at REMOTE CONTROL and below of it is the speed of the supply fan.

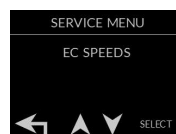


External control fan speeds

0-2V fan 0
2-5V fan 2
5-7V fan 3
7-9V fan 4
9-10V fan 5

FAN SPEED PRIORITY

Fan speed preselection is performed from the control panel service menu.
Inlet and outlet fans can be individually adjusted for five different speeds with fan speeds of 20-100%

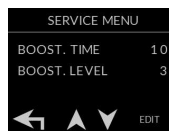


DEFAULT SETTINGS

1. 30 %
2. 40 %
3. 60 %
4. 80 %
5. 100 %

BOOSTING FROM THE COOKER HOOD WITH CONTACT TIP INFORMATION.

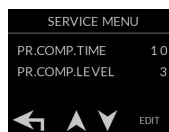
Boosting time settings 0 and 5...120 min. In 0 position with different pre-data
Boosting level settings 1...4 (the air impellers higher than basic speed), can be
adjusted also from the settings menu.



Factory setting
10 min
3

SEPARATE FIREPLACE SWITCH OR PRESSURE COMPENSATION

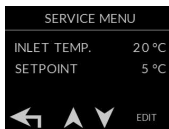
Overpressure duration specification 0 and 5...20 min. In 0 position with different
pre-data
Overpressure limit regulation 1...4 (inlet air impeller higher than outlet air impeller)



Factory setting
10 min
1

REGULATION of the INLET AIR TEMPERATURE

Inlet air temperature range 5...30 °C,
can be adjusted via SETTINGS menu

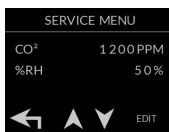
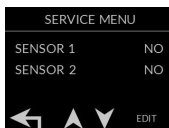


Factory setting
17 °C

CO₂ AND/or RH SENSORS ACTIVATION

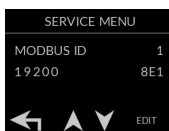
CO₂ AND HUMIDY PERCENTAGE SETTING

Note: set the sensor on in the settings menu



MODBUS MENU

Check the separate Modbus manual



THE CHANGES OF THE SERVICE MENU SETTINGS ALWAYS HAVE TO BE SAVED



THRESHOLDS FOR FREEZING PROTECTION

The preheater and freezing protection are enabled, changes are only if needed.

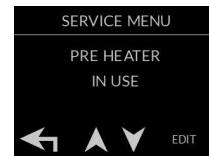
Temperature measurements of the preheater and WASTE AIR COLD are measured from the waste air temperature

The preheater is switched on from the service menu.

The limit value of the preheater can be changed from the service menu if necessary. The adjustment range is 0 - +10 °C. The limit value of the preheater must be approx. 5 °C higher than the WASTE AIR COLD limit.

It is recommended to use value a minimum of 5 °C for the WASTE AIR COLD limit, if the preheater is not in use. When the preheater is in use, the set value is about 5 °C lower than the limit value of the preheater. The adjustment range is -10 ... + 10 °C

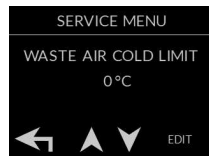
CHANGES OF THE SERVICE MENU SETTINGS ALWAYS HAVE TO BE SAVED



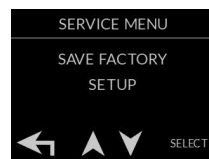
*Factory setting
IN USE*



*Factory setting
5 °C*



*Factory setting
0 °C*



SETTINGS ARE APPLIED VIA THE SETTINGS MENU OF THE CONTROL PANEL

The summer bypass plate control. The user of the unit can set the bypass plate manually to SUMMER/WINTER or AUTOMATIC mode.

In summer mode the bypass plate is activated

In the automatic mode, the plate works according to outside temperature.

Set value 15...20 °C

The automatic mode has adjustment amplitude of approx 2 hours

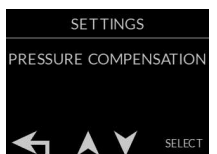
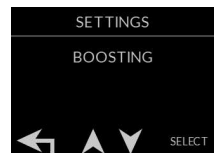
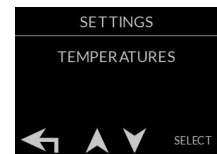
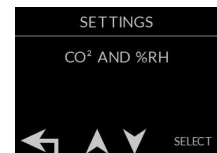
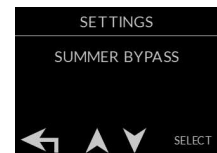
CO₂ transmitter ON/OFF switching. Setting of CO₂ upper limit.

Set value 250...1500ppm, 50ppm steps

%RH transmitter ON/OFF switching.

Setting of RH upper limit. Set value 30...80%, 5% steps

Regulating amplitude 5...20min



Regulation of inlet air afterheating set value 5...30 °C

Set value of boosting duration 0 and 5...120 min.

In 0 position with different pre-data.

Set value of overpressure duration time (fireplace switch) 0 and 5...30 min. In 0 position with different pre-data.

INTEGRATED HUMIDITY TRANSMITTER (optional)

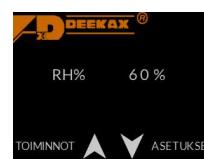
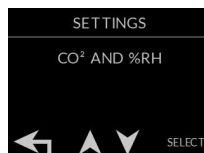
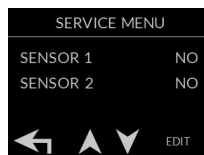
If the unit is equipped with a factory-fitted extract air humidity transmitter. The fan speed is automatically enhanced when the humidity exceeds the limit value.

The humidity transmitter is active when SENSOR 2 RH is selected in the service menu

The limit value, the adjustment interval and ON/OFF can be selected in the SETTINGS menu under CO₂ and %RH

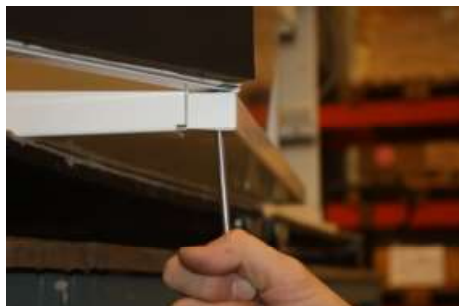
The humidity transmitter also has an on / off switch

The humidity percentage is displayed on the main menu screen.



DOOR REVERSAL EXCHANGE

Door reversal can be changed by pushing the hinge pin e.g with narrow tip screwdriver from the machine below or from above.



REMOVING THE FAN

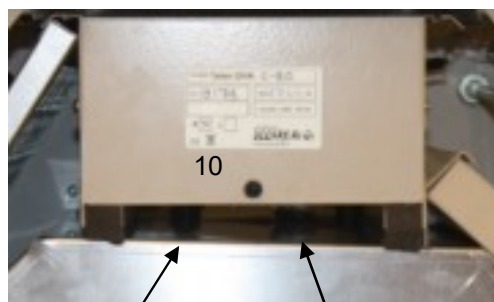
The fans can be removed for cleaning or replacement. Before removing the fan, remove the HR cell and filters. There is a cover plate in the front of the fan, remove it by removing the screws, 2 pcs. Unplug the fan plug connector. The fan is removed from the housing with end plate.

The fan cover plate screws



OVERHEAT PROTECTIONS

The overheat protection has been activated in case the temperature of the heating element has risen to +90 °C (for instance in case of power failure). Remove the threaded cap from the overheat protector button and press the button.



Preheat overheat protection

Afterheat overheat protection



MAINTENANCE OF TALTERI

For producing good indoor climate continuously, the air exchange systems require regular maintenance. The metallic grease filter of stove hood must always be kept clean for fire safety reasons. Cleansing with hot water or dishwasher once a month is necessary. Substances suitable for machine washing may darken the aluminium parts of the filter. The inlet and outlet filters of Talteri must be cleansed at least twice a year.

In summertime the summer cassette plate will be set to summer mode when the external air should come in fresh and clean.

The heat recovery cell will be pulled out of the unit and washed thoroughly in autumn just before the heating season begins –the heat recovery will then be at its best. Check the condition of sealing and push the heat recovery cell back to its place.

The inner painted walls of the unit are easy to clean. Check the condition of sealing, clean the outlet hose of condensing water and make sure the water flows freely and without any obstructions.

The impellers, air exchange adjusters and thermostats are components that do not require regular maintenance. Electrical works can be carried out only by a qualified electrician.

During the frosty period the heat recovery cell is defrozen by using the preheater. The power of the preheater is mainly adequate to keep the heat recovery cell defrozen. In extreme conditions, if the power of the preheater is not sufficient, the supply fan power will be reduced or stopped by the freezing protection thermostat when the exhaust air temperature drops below the set value (0°C). The supply fan starts when the exhaust air temperature rises above the set value.

Under extreme conditions (humidity /harsh cold) the HR-element may freeze over and the anti-freeze protection defreezing cycles are not able to defrost it. If such a case occurs, the machine has to be stopped, opened and the cold flow stopped and the ice given the necessary time to melt. Check the drainage of condensing water! In case the water-lock dries out and makes pulping noise, you can pour a drop or two of cooking oil.

In really cold weather, the head recovery unit heats the preheated inlet air with afterheating. The functionality can be proved by comparing the temperature of inlet air to the set value of the inlet air afterheating.

The overheat protection has been activated in case the temperature has risen +90 °C (for instance, in case of power failure). Reset the overheat temperature by pressing the switch under the threaded contact protection.

The channels must be checked if the impeller works but the air exchange is inadequate or the temperature changes in the channels between the interior and the machine. Temperature changes and humidity concentration in channels must be prevented by improving the isolation.